

**A Teacher’s Guide to “Out of Your Mind: The Biggest Mysteries of the Human Brain” by Jorge Cham and Dwayne Godwin, Pantheon, 2025.**

**Out of Your Mind** is an engaging, question-driven neuroscience book that helps students in AP Psychology, neuroscience, anatomy and physiology, health science, and interdisciplinary STEM-humanities courses connect core brain concepts to the questions they already care about: love, hate, memory, addiction, consciousness, happiness, free will, and what makes us human. Through vivid case studies, comics, and accessible storytelling, it gives teachers a high-interest way to spark discussion, reinforce brain-behavior principles, and show how neuroscience connects directly to health, identity, and everyday life. A map of how book chapters map to the Society for [Neuroscience Core Concepts](#) is contained in the following table.

Neuroscience Core Concept	Where to find the concept	Possible classroom use
Your Complex Brain	A Mindful Introduction; Ch. 1 Where Is the Mind? The book presents the brain as the epicenter of the self, emphasizes its enormous complexity, and frames personhood as emerging from distributed brain systems and connections.	Introductory unit on what the brain is, why it matters, and how complexity gives rise to mind and behavior.
How Neurons Communicate	A Mindful Introduction; Ch. 1 Where Is the Mind?; Ch. 5 What Are the Limits of Memory? Chapter 1 discusses cells activating and talking to each other through electrical signaling; the memory chapter is a natural place where synapses and storage mechanisms extend that idea. “Will an AI Take My Job?” show the differences between brain cells and computers.	Primer on neurons, signaling, synapses, and how cellular communication supports thought and memory.
How Your Brain Processes Information	Ch. 1 Where Is the Mind?; Ch. 2 Why Do We Love?; Ch. 3 Why Do We Hate?; Ch. 5 What Are the Limits of Memory?; Ch. 7 What Is Consciousness?; Ch. 8 What Makes Us Happy?; Ch. 9 Do We Have Free Will? The book repeatedly asks how the brain generates emotion, memory, judgment, consciousness, and choice.	Discussion-based module on how the brain turns sensation, memory, and emotion into experience and action.
How Experience Shapes Your Brain	Ch. 1 Where Is the Mind?; Ch. 5 What Are the Limits of Memory?; Ch. 6 What Is Addiction? Chapter 1 shows how wiring is shaped by genes and experience, and that connections are reinforced or abandoned over time; the memory and addiction chapters are natural places where plasticity, learning, and habit formation are developed further.	Unit on plasticity, development, learning, habit formation, and how experience changes brain circuitry.
Reasoning, Planning and Solving Problems	Ch. 1 Where Is the Mind?; Ch. 4 Will an AI Take My Job?; Ch. 9 Do We Have Free Will?; Ch. 11 What Makes Us Human? Chapter 1 uses Phineas Gage and frontal lobe function to link the brain to impulse control and planning; later chapters extend this to judgment, intelligence, agency, and higher cognition.	Seminar on executive function, frontal lobe roles, decision making, and what counts as higher thought.
The Power of Language	Ch. 1 Where Is the Mind?; Ch. 11 What Makes Us Human? Chapter 1 gives a classic language-neuroscience treatment through Broca’s area, Wernicke’s area, aphasia, and the arcuate fasciculus; Chapter 11 extends this to symbolic language and human distinctiveness.	Lesson on localization of function, aphasia, language networks, and why language is central to human cognition.
The Source of Curiosity	A Mindful Introduction; entire question-driven structure; A Brainy Conclusion. The book approaches the brain with a curious mind, stresses that science is a process rather than a fixed set of answers, and organizes the whole work around big questions.	Model for inquiry-based teaching: start with big questions, then examine evidence, history, and competing explanations.
How Research Benefits Human Health	A Mindful Introduction; Interlude A Primer on Fear; Ch. 5 What Are the Limits of Memory?; Interlude A Primer on Alzheimer’s; Ch. 6 What Is Addiction?; Ch. 7 What Is Consciousness? The contents show repeated links between neuroscience, disorder, and human well-being.	Case-based teaching on how neuroscience research informs understanding of injury, disease, treatment, and mental health.

## **Classroom Uses for Out of Your Mind by Course Type**

This book works best as a supplement for discussion, inquiry, case studies, visual explanation, and cross-disciplinary teaching. It was designed to use comics and cartoons to explain how the brain works, to organize learning around big questions, and to present science as a process rather than a recitation of facts.

### **AP Psychology / Psychology Electives**

Best fit for units on emotion, memory, addiction, consciousness, identity, motivation, and decision-making.

Teachers already doing class discussion, case studies, demos, and short reflections can use the book to deepen those lessons with memorable big-question framing.

Activities:

- Socratic seminar on questions like What is love, What is consciousness, or Do we have free will
- Memory demo followed by a comic summary of how memory works
- Case-study presentations on H.M., Phineas Gage, or aphasia
- Short reflection writing on how neuroscience changes students' understanding of self and behavior

### **Biology / Honors Biology / AP Biology**

Useful as an enrichment text for nervous system organization, cell communication, plasticity, behavior, and the relationship between genes and experience.

Teachers already using diagrams, concept maps, and lab-style evidence questions can use the book to humanize content and connect mechanisms to real life.

Activities:

- Turn neuron signaling, synapses, or plasticity into a one-page comic
- Build a concept map linking neurons, circuits, behavior, and experience
- “How do we know?” evidence tracker after each reading
- Compare textbook explanation versus visual storytelling explanation of the same concept

### **Anatomy and Physiology**

Strong for brain structure-function relationships, localization, sensory and motor maps, and clinical consequences of brain injury.

Teachers already covering labeled anatomy, brain regions, or body systems can use the book to make those structures matter through story and case evidence.

Activities:

- Label brain regions, then match each to a case or behavior
- Create a class brain map from Broca, Wernicke, Penfield, and Gage
- Use a lesion-case challenge: what function would be affected and why
- Student-created mini-posters on brain region, function, and clinical syndrome

### **Neuroscience / Brain and Behavior Electives**

The book naturally supports systems thinking, mind-brain questions, historical discovery, and case-based neuroscience.

Teachers already using journal discussion, research summaries, or capstone projects can use the

book as an accessible spine for thematic units.

Activities:

- Student comics on fear, addiction, memory, language, or consciousness
- Historical timeline of major discoveries in brain science
- Big-question unit opener followed by evidence-based discussion
- Student-made illustrated primer on dopamine, sleep, stroke, epilepsy, or Alzheimer's

### **Health Science / Biomedical Science / Medical Academy Courses**

Excellent for linking brain science to trauma, neurological disease, behavior, mental health, and the lived experience of patients.

Teachers already using patient cases, disorder units, or career-pathway content can use the book to connect biology with medicine and human experience.

Activities:

- Patient-case rounds on brain injury, memory loss, aphasia, or addiction
- Create a patient-friendly comic or handout on a neurological disorder
- Compare symptoms to likely affected brain systems
- Group project on how neuroscience research improves diagnosis or treatment

### **STEM Seminar / Inquiry Science / Capstone Courses**

Useful for emphasizing that science is a process of questioning, observing, testing, and revising understanding.

Teachers already using CER writing, debates, or project-based learning can use the book to model curiosity-driven science.

Activities:

- “How do we know?” claim-evidence-reasoning assignments
- Debate on AI, free will, or consciousness using scientific evidence
- Design a mini-investigation or observation-based neuroscience question
- Create a museum-style exhibit panel answering one big brain question

### **English, Humanities, or Interdisciplinary Seminar Courses**

Works well wherever teachers want to connect science with storytelling, ethics, identity, literature, or philosophy.

Teachers already assigning nonfiction analysis, discussion, and argument can use the book to show how science writing can be rigorous, visual, and human.

Activities:

- Pair a chapter with Shakespeare, Mary Shelley, or a modern essay
- Analyze how comics communicate complex ideas differently than prose
- Write an argumentative essay on free will, consciousness, or what makes us human
- Create a visual narrative explaining a neuroscience concept for a general audience

### **Bottom line for teachers**

This book adds the most value to what teachers are already doing, especially discussion, demos, case studies, writing, or projects that would benefit from a more vivid, inquiry-driven way to teach the brain. Its strength is not as a traditional textbook, but as a high-interest bridge between neuroscience content, human questions, and creative classroom practice.

## Editorial Reviews for “Out of Your Mind”

“Filled with wit (visual and verbal), charm, and good sense, Out of Your Mind is an inviting and enjoyable way to learn about the human brain.”—Steven Pinker, Johnstone Professor of Psychology, Harvard University, and the author of How the Mind Works and Rationality

“Utterly delightful. . . . As entertaining and fun to read as it is deeply insightful and philosophical.”—[Pittsburgh Post-Gazette](#)

“The lay reader is well served by the deft and compassionate handling of complex topics. . . . Interesting and accessible . . . without sacrificing accuracy or scientific credibility.”—[American Scientist](#)

“Out of Your Mind is a highly creative way to convey science, especially about that most mysterious of all human organs, the brain. This is no dry text book, nor a comic book. It is a fun-filled trip, with clear and easy to read explanations, humor and wit, entertaining illustrations, and good storytelling to boot.”—Alan Lightman, author of The Transcendent Brain

“For anyone curious about the new frontiers of brain science, from why we love to how we remember, this playful and accessible approach is the perfect place to start.”—Casey Schwartz, author of In the Mind Fields: Exploring the New Science of Neuropsychology

“Together [Cham and Godwin] make brain science—an extremely complicated subject—accessible to the general reader. . . . Cham’s drawings turn complexity into amusing simplicity. . . . An entertaining examination of fundamental questions about what makes us human.”—Kirkus

“If you’re interested in brain science and unsure where to start, this is a good choice.”—Outside, “The 2024 Sweat Science Holiday Book List”

“[A] fizzy investigation of how the brain works . . . [m]ixing science with lighthearted illustrations.”— Publishers Weekly

“Fun and inventive. . . . I was so engrossed that I was reading for hours.”—Girl Who Reads Blog

“Out of Your Mind is the perfect combination of great reading, clever illustrations and smart science. . . . Here’s the book to help you know your own mind, and to understand others.” —Narrative Species Blog

“Highly informative and fun to read. . . . [If] you’ve pondered serious questions about the human mind, memory, consciousness, and other experiences that make us human then Out of Your Mind is a book for you.” —The Gay League Blog

“Brilliant. . . . A properly accessible introduction to the fascinating world of how our minds work.”—[TheLucidGuide.com](#)

“An excellent primer. . . . A worthy edition to any personal library.”—VDevianceOnline Blog

“Human brains are the single greatest natural resource we have on the planet, and Jorge and Dwayne are two of my favorites. Out of Your Mind is fascinating, moving, funny, and thoughtful (no pun intended).” —Ryan North, author of How to Invent Everything

“The most gentle and comprehensive introduction to the human mind—from cells to societies. Thanks to the lucid writing and charming art, after years of pretending, I now actually understand neurons and neural networks.”—Zach Weinersmith, illustrator and co-author of Soonish and A City on Mars

“With a witty and humorous combination of words and pictures, Cham and Godwin distill the intricacies of one of nature’s most complex phenomena—the human brain! They’ve created an accessible illustrated

introduction to the cognitive roots of many of life's mysteries . . . love, hate, fear, consciousness, and what makes us human. Out of Your Mind will stay on your mind, as you think about your mind!"—Neil Cohn, Ph.D., cognitive neuroscientist and author of *The Visual Language of Comics*

"Cham and Godwin dare to ask some of the most difficult questions about the human brain with a mix of prose and comics that will have you laughing as hard as you're thinking."—Matteo Farinella, author of *Neurocomic*

"A delightfully accessible and informative book about the brain for minds of all ages."—R. Douglas Fields, PhD, author of *Electric Brain*

"As a theoretical physicist, I usually stay away from thinking about the brain because it's too complicated. This book might just be the solution. Psychology, neuroscience, and philosophy are all explained in an engaging way that will fit well with just about anybody's brain."—Sean Carroll, author of *Quanta and Fields: The Biggest Ideas in the Universe*

"Out of Your Mind will bring you into your brain. It will entertain you and charm you and yet respect the science that inspired it."—Antonio Damasio, author of *Descartes' Error*

## About the Authors

**Jorge Cham** is the Daytime Emmy-nominated and best-selling cartoonist creator of the popular online comic strip "Piled Higher and Deeper" (known as PHD Comics - phdcomics.com). He's the co-creator, Executive Producer and Creative Director of "Elinor Wonders Why," one of the highest-rated animated shows on PBS Kids, and the co-author of two popular science books: the best-selling and award-winning *We Have No Idea: A Guide to the Unknown Universe* and *Frequently Asked Questions about the Universe*, as well as the children's book *Oliver's Great Big Universe*. Jorge is also the co-host and co-creator of "Daniel and Jorge Explain the Universe" a popular podcast and radio show. He obtained his Ph.D. in robotics from Stanford University and was an Instructor and Research Associate at Caltech from 2003-2005. He is originally from Panama.

**Dwayne Godwin** is a neuroscientist, educator, and academic leader. He's a professor in the Department of Translational Neuroscience and served as graduate dean at the Wake Forest University School of Medicine in Winston-Salem, North Carolina. His research centers on the cellular basis of abnormal brain rhythms, including active projects on calcium channel function, epilepsy, and traumatic brain injury. His goal is to use emerging insights about the brain to develop treatments and potential cures for neurological diseases. His science outreach includes *Mind in Pictures*, cocreated with Jorge Cham for *Scientific American Mind*, as well as blogs for the Society for Neuroscience and the Museum of the Moving Image.

